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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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7590

11/30/2004

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EXAMINER

LOUIE, WAI SING

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 09/936,742	Applicant(s) MIWA ET AL	
	Examiner Wai-Sing Louie	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 6-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 10-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A restriction was mailed on 8/17/2004. However, the restriction was inadvertently made under 35 U.S.C. 121 instead of 35 U.S.C. 371 format. The Examiner inform the applicant after the election was made in 8/30/2004 and the applicant requests to have the restriction be done in 35 U.S.C. 371 format.

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-5 and 10-20, drawn to a liquid crystal display device.

Group II, claim(s) 6-9, drawn to a method of manufacturing the device.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The device in Group I comprises a pair of substrates bonded together by a sealing material to form a frame to hold the liquid crystal and a reflective layer at the liquid crystal side of the substrate. However, the manufacturing method in Group II includes a mask material to form the roughened area of the reflective layer. Therefore, Group I and Group II are lacked of this common technical feature.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant's election with traverse of Group I, claims 1-5 and 10-20 in the reply filed on 8/30/2004 is acknowledged. The traversal is on the ground(s) that there would be no burden in examining both groups. This is not found persuasive because:

The Inventions Group I and Group II are related as process of making and product made and the inventions Group I and Group II belong to different classes, which require separate searches and considerations. The separate searches and considerations for each group would provide a burden on the examiner.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-5, 12, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimada et al. (US 5,805,252).

With regard to claims 1 and 5, Shimada et al. disclose a reflection type liquid crystal display (col. 8, line 14 to col. 13, line 45 and fig. 14) comprising:

- a pair of substrates (upper 30a and lower 30b) bonded to each other by a sealing material in the form of a frame provided between (col. 11, lines 8-13);
- liquid crystal 49 held between the pair of substrates 30a and 30b (col. 11, lines 14-22);
- a reflective layer 38 formed on one of the substrate 30a at the liquid crystal 49 side (fig. 14);
- an alignment film 44 formed over the reflective layer 38 at the liquid crystal 49 side (fig. 14), where a surface has a roughened area which is roughened and a flat area which is flat and surrounds the roughened area (abstract, col. 1, lines 37-47 and fig. 14), the alignment film is formed in the roughened area (fig. 14), and, inherently, the seal material is formed in the flat area in order to have a good seal.

With regard to claims 3, 12, and 14, Shimada et al. disclose the reflective layer 38 has a plurality of apertures 43 (fig. 14).

With regard to claim 4, Shimada et al. disclose a color filter layer 46 and a protective layer 47 protecting the color filter 46, which is provided between the reflective layer 38 and the alignment film 48 and in the roughened area of the one of the substrate 30a (fig. 14).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 10-11, 13, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al. (US 5,805,252).

With regard to claim 2, Shimada et al. disclose a boundary of the roughened area 38a (where the oxide layer is located) and the flat area, but do not disclose the flat area is located between an inside periphery of the sealing material and a periphery of alignment film 44. However, Shimada et al. disclose the sealing material adheres the substrates 30a and 30b to form a space to house the liquid crystal 49 (col. 11, lines 8-22). Therefore, it would have been obvious for the one with ordinary skill in the art to place the sealing material at the flat area of the periphery of the substrates. The sealing material is in between substrates 30a and 30b, which includes alignment film 44 (fig. 14).

With regard to claims 10, 13, and 17-20, in addition to the limitations disclosed in claims 1-2 above, Shimada et al. also disclose:

- a first alignment film 48 formed on a liquid crystal 49 side of the upper (front) substrate 30b (fig. 14);
- a second alignment 44 formed on a liquid crystal 49 side of the lower (backside) substrate 30a (fig. 14);

- the roughened area including reflective film 38 and the oxide layer 38a contains a plurality of protrusions and recesses (fig. 14);
- a plurality of spacer dispersed between the first and second alignment layers 44 and 48 (col. 11, lines 14-16).

With regard to claim 11, Shimada et al. disclose the color filter 46 is disposed between the upper substrate 45 and the alignment film 48, but do not disclose the color filter 46 is disposed between the insulating layer 38a and the lower substrate 31. However, it would have been obvious for the one with ordinary skill in the art to dispose the color filter to the lower substrate 30a. The reversal of parts was held to have been obvious for a person having ordinary skill in the art. In re Gazda 104 USPQ 400 (CCPA 1955).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al. (US 5,805,252) in view of Fergason et al. (US 5,519,524).

With regard to claim 15, Shimada et al. do not disclose a light source used in the liquid crystal display. However, Fergason et al. disclose a light source 16 through the liquid crystal display 10 (Fergason fig. 1). Fergason et al. teach the light allows increasing the brightness of images created by a liquid crystal cell (Fergason col. 3, lines 50-54). Shimada et al. and Fergason et al. have substantially the same environment of a liquid crystal display having reflective layer on the lower substrate. Therefore, it would have been obvious at the time the invention was made to modify Shimada's device with the teaching of Fergason et al. to provide a light source in order to increase the brightness of images created by a liquid crystal cell.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al. (US 5,805,252) in view of Kim et al. (US 6,812,978).

With regard to claim 16, in addition to the limitations disclosed in claims 1, 10, and 13, Shimada et al. also disclose:

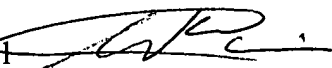
- Shimada et al. do not disclose a polarizer and a retardation plate. However, Kim et al. disclose a liquid crystal display having a polarizer 154 and a retardation plate 146 (Kim col. 9, lines 25-26 and fig. 8). Kim et al. disclose the polarizer and the retardation plate change the phase and direction of the transmitted light or images in order to transmit the white state of the transmission (Kim col. 4, lines 39-49). Shimada et al. and Kim et al. have substantially the same environment of liquid crystal display having a reflective layer. Therefore, it would have been obvious for the one with ordinary skill in the art to modify Shimada's device with the teaching of Kim et al. to provide a polarizer and a retardation plate in order to change the phase and direction of the transmitted the white state of the light or images;
- Shimada et al. disclose a plurality of gate (scanning) lines 32 (fig. 15).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (571) 272-1709. The examiner can normally be reached on 7:30 AM to 4:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WSI 
November 18, 2004.